

WHAT IS CLAIMED IS:

1. An optical disc comprising a first base plate having a surface in which a recess is formed and a multi-layer structure disposed on the surface, wherein the multi-layer structure includes:

a reflection layer disposed over the surface of the first base plate;

a recording layer, formed over the reflection layer, for substantially filling an inside of the recess; and

a transparent member that is capable of transmitting writing/reading radiation, said transparent member covering the recording layer.

2. The optical disc of claim 1, wherein a thickness of the recording layer in a bottom portion of the recess of the first base plate is 1.5 times or more as large as a thickness of the recording layer in a flat portion of the first base plate.

3. The optical disc of claim 1, wherein a top surface of the recording layer is substantially planarized, and a step in the top surface of the recording layer being smaller than a step in a top surface of the reflection layer.

4. The optical disc of claim 1, wherein the recording layer is formed by spin coating.

5. The optical disc of claim 1, wherein the recording layer is made of a

recording material containing a dye.

6. The optical disc of claim 5, wherein the recording layer is partially in contact with a surface of the first base plate via opening portions existing in the reflection layer.

7. The optical disc of claim 6, wherein the first base plate is made of a material which reacts with a recording layer irradiated with writing radiation.

8. The optical disc of claim 6, wherein the reflection layer is made of a material having an island-like structure.

9. The optical disc of claim 1, wherein the transparent member is made of a radiation curable resin.

10. The optical disc of claim 1, wherein the transparent member is made of a thermosetting resin.

11. The optical disc of any one of claims 1 to 8, wherein the transparent member includes:

a second base plate capable of transmitting the writing/reading radiation;
and

an adhesion layer for bonding the second base plate to the first base

plate, and

the first base plate and the second base plate are bonded together via the adhesion layer.

12. The optical disc of claim 11, wherein the adhesion layer is made of a radiation curable resin.

13. The optical disc of claim 11, wherein the transparent member includes a semitransparent reflection layer and a second recording layer.

14. The optical disc of claim 13, wherein in the second recording layer, read only information is recorded in the form of a groove and/or a pit.

15. The optical disc of claim 11, wherein a protection film capable of transmitting the writing/reading radiation is formed between the first base plate and the adhesion layer.

16. The optical disc of claim 1, wherein a thickness of the transparent member is 0.3 mm or less.

17. The optical disc of claim 16, wherein a thickness of the first base plate is 1.0 to 1.2 mm.

18. The optical disc of claim 1, wherein a depth of the recess is $\lambda / (4 \times n)$ or less, when a wavelength of reading radiation is λ and a refractive index of the recording layer is n .

19. A method for fabricating an optical disc comprising a step of producing a first substrate, a step of producing a second substrate, and a step of bonding the first and second substrates by an adhesive which is substantially transparent, wherein

the step of producing the first substrate includes the steps of:

preparing a base plate provided with a surface having a recess;

forming a reflection layer on the surface of the base plate; and

substantially filling an inside of the recess with a recording layer.

20. The method of claim 19, wherein a thickness of the recording layer in a bottom portion of the recess of the base plate is 1.5 times or more as large as a thickness of the recording layer in a flat portion of the base plate.

21. The method of claim 19, wherein the step (c) includes a step of applying the recording layer on the reflection layer by spin coating.

22. The method of claim 19, wherein the step of producing the second substrate includes:

a step of forming a pit and/or a groove on one side of a base plate which is

substantially transparent; and

a step of forming a semitransparent film.

23. The method of claim 19, wherein a radiation curable resin is used as the adhesive which is substantially transparent.

24. The method of claim 19, wherein after the application step, a protection film is formed on the recording layer, and a bonding step is performed.

25. A method for fabricating an optical disc comprising the steps of:
preparing a base plate provided with a surface having a recess;
forming a reflection layer on the surface of the base plate;
substantially filling an inside of the recess with a recording layer;
applying a material which is substantially transparent; and
curing the substantially transparent material.

26. The method of claim 25, wherein a thickness of the recording layer in a bottom portion of the recess formed in a surface of the reflection layer is 1.5 times or more as large as a thickness of the recording layer in a flat portion of the surface of the reflection layer.

27. The method of claim 25 or 26, wherein the step (c) includes a step of applying the recording layer on the reflection layer by spin coating.

28. The method of claim 25, further comprising after the application step and before the step of applying the substantially transparent material:

a step of forming information layer in which information is recorded in the form of a pit or a groove; and

a step of forming a semitransparent reflection layer.

29. The method of claim 25, wherein the application of the substantially transparent material is performed by spin coating.

30. The method of claim 25, wherein the substantially transparent material is made of a radiation curable resin, and the substantially transparent material is irradiated with radiation in the step of curing the substantially transparent material.